GEORGIA INSTITUTE OF TECHNOLOGY
Engineering Experiment Station

no mgt. rec'd

PROJECT INITIATION

Date: April 3, 1969

Project Title: Market Projections for Transmission Towers and Substation Structures

Project No.: A-1162

Project Director: W. I. Denman, Jr.

Sponsor: Atlantic Steel Company

Effective: April 1, 1969 Estimated to run until: May 1, 1969

Type Agreement: Letter dated 3-17-69 Amount: $ 800

Reports: Final Report upon completion of project.

Contact Person: Mr. J. H. Owen, Director
Corporate Planning and Engineering
Atlantic Steel Company
P.O. Box 1714
Atlanta, Georgia 30301

Assigned to IDD Division

COPIES TO:

- ☐ Project Director
- ☐ Director
- ☐ Associate Director
- ☐ Assistant Director(s)
- ☐ Division Chiefs
- ☐ Branch Head
- ☐ General Office Services
- ☐ Engineering Design Services
- ☐ Photographic Laboratory
- ☐ Research Security Officer
- ☐ Accounting
- ☐ Purchasing
- ☐ Report Section
- ☑ Library
- ☐ Rich Electronic Computer Center
- ☐ _____

GEORGIA INSTITUTE OF TECHNOLOGY
Engineering Experiment Station

PROJECT TERMINATION

Date July 1, 1969

PROJECT TITLE: Market Projections for Transmission Towers and Substation Structures

PROJECT NO: A-1162

PROJECT DIRECTOR: W. I. Denman, Jr.

SPONSOR: Atlantic Steel Company

TERMINATION EFFECTIVE: May 1, 1969

CHARGES SHOULD CLEAR ACCOUNTING BY: All charges have cleared.

Industrial Development Division

COPIES TO:

Project Director
Director
Associate Director
Assistant Directors
Division Chief
Branch Head
Accounting
Engineering Design Services
General Office Services
Photographic Laboratory
Purchasing
Report Section
Library
Security
Rich Electronic Computer Center

AY 16 1969
IBRARY

TRANSMISSION TOWERS AND SUB-STATION EQUIPMENT

The annual market for transmission towers and sub-station equipment within a 400-mile shipping radius of Atlanta, Georgia, should be an estimated $21,636,100 in 1969 -- and $24,470,600 in 1970, an increase of about 13.1%. The market for transmission towers alone is estimated at $16,642,800 in 1969 and $19,410,800 in 1970. Sub-station steel purchases should increase from $4,993,300 in 1969 to $5,059,800 in 1970. These estimates are based upon telephone interviews with 16 power companies in the states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia. Small areas of other states touched by the 400-mile radius were not considered in this report; however, based on interviews and the total picture in Georgia, electric memberships and municipals were considered in the estimate. Tables 1 and 2 on the following pages provide a breakdown of the estimated market by company contacted, showing tower and tonnage of sub-station steel separately.

Projections of company figures yield a total market of $37,765,799 by 1973 for transmission towers and sub-station steel in the Southeast. Individual company estimates for 1970-1973 are given in Table 3. All but four companies gave an estimated annual growth rate for future years. This growth rate varied from 10% to 35% for the 12 companies reporting. The conservative figure of 10% was used for Alabama Power Co., Florida Power Co., Mississippi Power & Light Co., South Carolina Electric & Gas Co., and "Others" who felt estimates could not be made at this time. Carolina Power & Light Co. has an unusual construction program. It is planning a tie-in with a 500-kv system in 1972, which will necessitate $2.5 million in new construction, but at the present time no other construction is planned prior to or following this major building program. These annual estimated increases will not be as smooth as indicated on paper because of the nature of construction in the power distribution industry. A company adds capacity as necessary, in steps, which creates a jumpy pattern of supply; so the annual increase estimate of 10% may well be, in actuality, 15% one year, 3% the next, and 12% the next.

The estimates are based upon a cost of $1,500 for each transmission tower when cost is not specified by reporting companies. Several companies

building 230-kv lines, 500-kv lines, and one with 765-kv lines reported cost figures for their individual needs. Steel used in sub-stations ranged, by companies reporting price, from 18¢ to 30¢ per pound. Figures were used that reflected company purchasing experience when given, otherwise a conservative figure of 20¢ per pound was used.

The following points should be emphasized in support of the estimated figures shown in the tables:

1. Each company estimated its annual needs in sub-station equipment by tons in order to have maximum accuracy in an area that varies widely per sub-station by company and type of station.

2. Ten percent was added in the "Others" column to compensate for municipals and electric membership corporations. This was based on the Georgia interviews where a more accurate figure was obtained.

3. No attempt was made to contact the smaller electric firms in the 10-state area; however, several larger municipal systems were interviewed.

A shipping radius of 400 miles is a realistic area in which to compete. Major suppliers of this kind of equipment presently operating within the 400-mile radius under consideration are as follows:

1. Anchor Metal Company - Anniston, Alabama
2. Nashville Bridge Company - Bessemer, Alabama
3. Union Metal Company - Canton, Ohio
4. Lehigh Structural Steel Company - Allentown, Pennsylvania

Sources indicated that freight cost is a dominant factor in bidding on jobs requiring this kind of equipment. Therefore, it seems unlikely that a manufacturer could compete effectively beyond a 400-mile shipping range. In fact, a manufacturer located in Georgia would probably find competition from northern-based manufacturers to be really strong only in the northern extensions of the 400-mile radius.

The following companies would be among the major customers of a manufacturer of this kind of equipment located in Georgia:

1. Georgia Power Co.
2. Duke Power Co.
3. Appalachian Power Co.

4. Tennessee Valley Authority
5. Virginia Electric and Power Co.
6. Kentucky Utilities Co.
7. Alabama Power Co.
8. Florida Power Co.
9. Mississippi Power Co.

Each company contacted was asked whether or not it purchased foreign steel. Only four companies of the 16 are currently purchasing foreign steel. The companies buy their foreign steel on a bid basis in accordance with the Buy American Act and Executive Order 10582 in existence since 1954. These documents provide that a domestic bid shall be deemed unreasonable and its acceptance deemed inconsistent with the public interest if the amount of the domestic bid exceeds the amount of the foreign bid by more than 6%. This comparison is based on price after import duty and transportation costs become part of the price. There is also a recommendation of the Council on Foreign Economic Policy which merits attention. It states that a 12% differential should be used when the low domestic bidder is located in an area classified by the Secretary of Labor as one of labor surplus or when the low domestic bidder is a small business firm. One large firm buying foreign steel stated that it probably purchased more than any other utility company in the nation. This company purchases approximately 2,000 tons of foreign steel annually, representing about 15% of total steel tonnage purchased. The four companies reporting usage of some foreign steel for the products in question are Appalachian Power Co., Duke Power Co., Tennessee Valley Authority, and Virginia Electric and Power Co.

Table 2

SUB-STATION STEEL IN SOUTHERN STATES BY COMPANY
FOR 1969 AND 1970

	Tons of Steel		Dollar Amounts	
	1969	1970	1969	1970
Alabama Power Co.	135	155	$ 54,000	$ 62,000
Appalachian Power Co.	2,100	2,100	840,000	840,000
Carolina Power & Light Co.	0	0	0	0
Duke Power Co.	4,200	4,500	1,680,000	1,800,000
Florida Power Co.	75	125	30,000	50,000
Florida Power & Light Co.	418	460	167,200	184,000
Georgia Power Co.	1,750	1,975	700,000	770,000
Gulf Power Co.	70	70	28,000	28,000
Kentucky Utilities Co.	425	475	170,000	190,000
Mississippi Power Co.	250	250	100,000	100,000
Mississippi Power & Light Co.	160	125	64,000	50,000
Monongahela Power Co.	275	275	110,000	110,000
South Carolina Electric & Gas Co.	455	182	182,000	72,800
Tampa Electric Co.	235	150	126,900	81,000
Tennessee Valley Authority	1,100	1,050	440,000	420,000
Virginia Electric and Power Co.	700	700	252,000	252,000
Others	123	126	49,200	50,000
Totals	12,471	12,718	$4,993,300	$5,059,800

Table 3

PROJECTIONS OF SUB-STATION AND TRANSMISSION TOWER STEEL
THROUGH 1973, BY COMPANY

	1970	1971	1972	1973
Alabama Power Co.	$ 576,500	$ 634,150	$ 697,565	$ 767,322
Appalachian Power Co.	4,222,500	5,700,375	7,695,506	10,388,933
Carolina Power & Light Co.	1,500	-	2,500,000	-
Duke Power Co.	5,323,500	5,962,320	6,677,798	7,479,134
Florida Power Co.	575,000	632,500	695,750	765,325
Florida Power & Light Co.	184,000	202,400	222,640	244,904
Georgia Power Co.	5,370,000	5,907,000	6,497,700	7,147,470
Gulf Power Co.	181,000	208,150	239,373	275,279
Kentucky Utilities Co.	790,000	869,000	955,900	1,051,490
Mississippi Power Co.	550,000	605,000	665,500	732,050
Mississippi Power & Light Co.	56,000	61,600	67,760	74,536
Monongahela Power Co.	144,500	158,950	174,845	192,380
South Carolina Electric & Gas Co.	72,800	80,080	88,088	96,897
Tampa Electric Co.	172,800	190,080	209,088	229,997
Tennessee Valley Authority	3,820,000	4,202,550	4,622,805	5,085,086
Virginia Electric and Power Co.	1,207,500	1,328,250	1,461,075	1,607,183
Others	1,223,000	1,345,300	1,479,830	1,627,813
Totals	$24,470,600	$28,087,705	$34,951,223	$37,765,799